

# An Overview of Informal Settlement Upgrading Strategies in Kabul City and the Need for an Integrated Multi-Sector Upgrading Model

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## Abstract

The developing economies are experiencing an unprecedented rate of urbanization, mainly in the poor urban areas as shown through the sprawling of slums and informal settlements of several cities in the world. This is also the case of Kabul, the capital and primate city of Afghanistan where around 82% of the people live in what is considered to be informal. Various interventions, from physical upgrading to urban renewal have been undertaken by the government and international organizations but none of them has succeeded to solve the rapid growth of informal settlements. Given the above, the magnitude of the urbanization and the complexity of informal settlements, this paper suggests the use of an integrated multi-sector upgrading as a reactive and proactive upgrading strategy. The paper analyzes the informal settlements formation and the conventional upgrading strategies used in Kabul city. This will help to identify dominant practices and finally rationalize them. For this purpose, Hothkhel has been selected as the case study. As a result, it has been found that the areas occupied by informal settlements have not been built to their respective full capacity. This implies that there is still room for additional buildable volume likely to lead to the preservation of available agricultural land. The result also indicates that the integrated multi-sector upgrading has the scale-up potential to increase the reach of beneficiaries and to ensure an inclusive and efficient urbanization.

## Keywords

Informal Settlement, Upgrading Strategies, Kabul City, Integrated Multi-Sector, Scale-Up

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## 1. Introduction

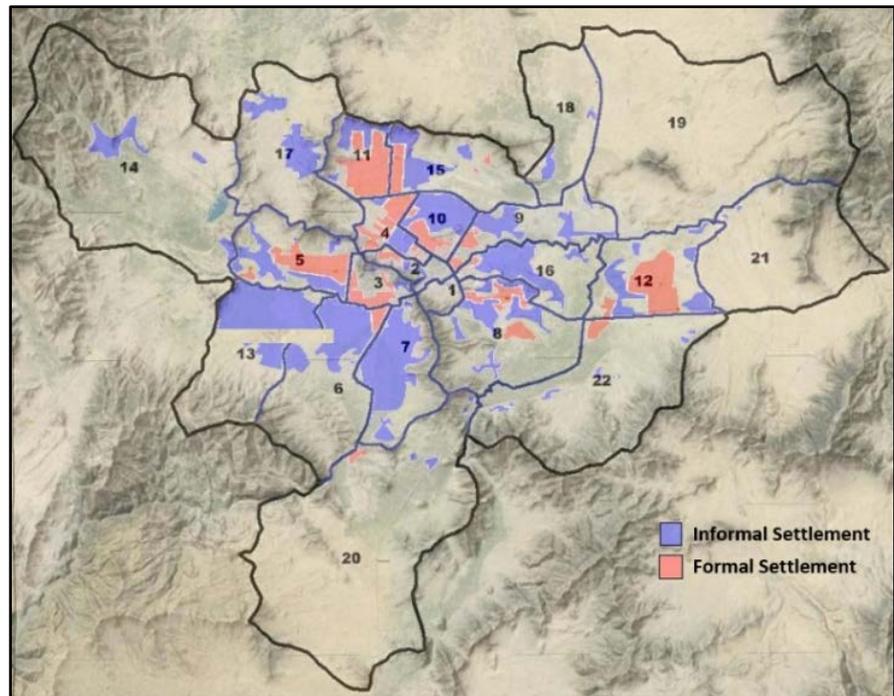
The sprawling of informal settlements is one of the common issues across the globe from which developing economies suffer the most, and Afghanistan is no exception. Urbanization in developing region has become virtually synonymous with the formation of informal settlements (UN-Habitat, 2006). Despite the fact that the proportion of the urban population living in informal settlements in developing countries has been fallen from 39% in 2000 to 30% in 2014 but the absolute number continued to grow, from an estimated 794 million in 2000 to approximately 880 million in 2014 (United Nations, 2014). The term “informal settlement” basically refers to unsanctioned subdivisions of land at the urban periphery where land invasion took place often by squatters, who build their houses usually without formal permission of the owner and often with substandard building materials (UN-Habitat, 2004).

In recent decades, due to rapid urban growth, Afghanistan’s major cities have ended up into multiplication of informal settlements where Kabul as the capital city has the biggest number of them. Afghanistan is generally considered to be rural society since, 75% of the people living in rural area, but the trend is changing and expected to decrease by 50% in 2060 (MUDH, 2015). Kabul as the capital and primate city of the country is now home to 41% of the total urban population of the country, of which 82% is considered to be informal. There are 55 informal settlements in Kabul city which accommodate a population of over 30,000 each (Samuel Hall Consulting, 2012). The expansion of these settlements is the direct result of governments’ slum ignorance policy and failure in providing affordable housing to the urban poor since formal housing supply only meets 5% - 10% of the total need, the informal settlements have been the only large-scale solution to the growing population. Therefore, they should not be perceived as housing crisis but rather as a solution developed by the urban poor under the existing conditions of limited economic resources, and when neither the government nor the private sector could provide dwellers with adequate and affordable housing (Khalifa, 2015).

Informal settlement can be found in all districts of Kabul city but the vast major part of it is concentrated in district 6, 7 and 13 in Southwest. Today these settlements represent 70% of all residential area and accommodated around 80% of total population of the city and represent a total private capital investment of US\$ 2.5 billion without considering land value (World Bank, 2016). **Figure 1** and **Table 1** show the distribution of formal and informal area within Kabul city.

Unlike other informal settlement in other developing countries, the informal settlement of Kabul city built mostly solid with durable material and well-design. Many cities across the globe with a lower growth rate than Kabul have faced a rapid expansion of slums usually made of substandard and temporary materials. Whereas in Kabul by contrast, although the majority of these informal settlements completely lack even basic infrastructure, the houses themselves are made of durable materials and providing adequate and permanent shelter to their in-

habitants (Bertaud, 2005).



**Figure 1.** Formal and informal settlement by district. Source: Habib, Hedayat, & Amiri, 2016.

**Table 1.** Distribution of the housing stock by Type. Source: Interpretation of Ikonos 2004.

Total					
Residential Land Use	Area (km <sup>2</sup> )	Population	% Area	% Population	Average Density (p/ha)
Formal	32.66	531,000	31	18	163
Informal	71.56	2,442,000	69	82	341
<b>Total Residential Area</b>	<b>104.22</b>	<b>2,973,000</b>	<b>100</b>	<b>100</b>	<b>285</b>
Formal Settlement					
Apartment	1.8	91,000	1.7	3.1	505
Townhouses	0.17	5000	0.2	0.2	293
Detached Houses	30.69	435,000	29.5	14.6	142
Informal Settlement					
Detached Houses	3.33	88,000	3.2	3	264
Courtyard Houses	57.96	1,980,000	55.6	66.6	342
Houses on Slopes	10.26	375,000	9.8	12.6	365

The informal settlements within Kabul city mostly take one of two forms; which defined by their land tenure and how they were developed.

### 1.1. Settlements on Privately-Owned Land (Mainly Agriculture)

These settlements are growing through the conversion of large agricultural plots to small residential plots, usually, the owner of land subdivide the land and sell to the people mostly immigrants. The purchased land from the owner is usually under Urfi contracts (customary deeds), these settlements are by far the most significant portion of the informal settlement and the major driver of land use conversion and as result the urban expansion of Kabul city.

### 1.2. Squatter on Public-Owned Land

Usually refers to illegal settlements on public land, Where the public land usually grabbed by people mostly IDP or some land grabbers which then illegally subdivide and sell to individuals. These lands are usually preserved by the master plan as recreational and open spaces. The most typical type of these informal settlements is built in slope and hillside location like Asmaie hill. The close location to the employment centers and CBD are the main driver of these settlements.

The main objective of this study is to give an overview of the conventional upgrading strategies practiced in Kabul city. This will help to identify dominant practices in order to optimize and or rationalize them.

## 2. Conventional Upgrading Strategies and Its Challenges

Lack of a comprehensive and appropriate upgrading strategy at city level led to the poor performance of all involved sectors in the informal area since there are several actors with the different type of interventions in Kabul city. The government intervention and performance in informal settlements upgrading is in its substantial phase. Although, various interventions have been taken, most of them ended up into mere physical upgrading or provision of basic infrastructure.

This research reviews different modes of interventions in the informal settlement of Kabul city including; service and basic infrastructure provision, physical upgrading and on-site redevelopment (urban renewal). The scope of them is mainly project level upgrading without a long-term vision to cover all the informal settlement or change the land-use planning and institutional mechanism to deal with causes of the problem to prevent the future sprawling of these settlements.

### 2.1. *In-Situ* Redevelopment (Urban Renewal)

The *in-situ* Redevelopment initiative is relatively recent and has been started under the Ministry of Urban Development and Housing's (MUDH) Urban Renewal Policy. The *in-situ* redevelopment approach replaces the existing physical fabric of the settlement through the on-site construction of the public housing as an alternative to the demolished houses of the residents. The main objective of this intervention is the upgrading of the inner-city informal settlements in response to the current urbanization and population growth, through vertical re-

development. To do so the MUDH started to build the public housing project mainly under two-phases, where, in the first phase of the project the available undeveloped land in the area is developing to house the residents of the area in order to acquire their plot for the second phase of the project. The mechanism is very simple, where each family is provided an 85 m<sup>2</sup> apartment as an exchange to 200 m<sup>2</sup> of their land/house, in order to consider their legal right and livelihood on staying to the same location. The problem associated with this type of upgrading is that it is considered to be a slum clearance approach and people do not trust the government or the private sector in providing alternative housing. Another concern with this method is that they convert all the vacant and agricultural plots into residential apartments, thus changing the whole physical and spatial configuration of the area by demolishing all the buildings, without consideration of the newly built structures which could have been preserved.

## **2.2. Physical Upgrading**

The Physical Upgrading method is performed by various national and international organizations especially by Kabul Municipality and UN-Habitat as part of government policy to deal with the air pollution of Kabul city. This is because one of the main preoccupations of the city was the air pollution from dust related to mainly unpaved streets and alleys in informal areas. Therefore, the government, with the support of international organizations, started the upgrading of these unpaved roads and alleys. The physical upgrading is the most common approach now since it does not deal with institutional and policy reforms. Their main activity is to pave the road and provide the basic drainage system. The material used for the pavement is usually concrete and recently they are using the cobblestone as well. It is worth to mention, that about 10% - 15% of the project cost is covered by the community.

## **2.3. Service Provision**

This one is a simple type of upgrading mode to design and implement because fewer activities, regulation and even fewer institutions are involved. The service and basic infrastructure intervention in Kabul city is mainly practiced by Capital Region Independent Development Authority (CRIDA) after receiving the proposal from the vulnerable communities. The program basically addresses the minimum needs of the people living in a specific informal settlement. These initiatives also come from the international organizations like UN-Habitat, GIZ, World Bank and so on. The overall outcome of these interventions is to improve the life condition of the residents through recognition of their rights to access to the basic services and social infrastructure.

## **2.4. Discussion**

During the past one and half decade, lots of efforts have been taken at national,

municipal and community levels to resolve the informal housing problems. Various housing development intervention practiced in order to deal with the rapidly growing informal settlements ranging from *in-situ* and physical upgrading to resettlement through building large-scale public housing and the new cities, where none of them succeed to resolve the issue of the sprawling informal development. Several factors contributed to this impasse, including rapid urbanization especially the urbanization of poverty, improper growth management policies, institutional and capital constraint and deficiency in the supply of affordable housing. As the case of service prevention and physical upgrading, mainly focus at project level without a long-term vision for the integration of these settlements as part of city-wide upgrading and are unable to cope with the current urbanization and growth rate. In the other hand the urban renewal strategy of MUDH do not consider the existing feature and potential of these settlements since they demolish the entire neighborhood and reconstruct from the scratch which completely changes the existing physical and spatial configuration of the area and as well as convert all the productive agricultural land to built-up area mostly to residential blocks. The concept of upgrading does not mean to change the layout of a neighborhood entirely.

The poor performance of government in financing and providing affordable housing to urban poor is now widely acknowledged and the growth of the informal settlements in Kabul and other major cities of the country is continuing to outweigh the formal delivery of housing since the urban population is growing at rapid pace. The formation and growth of informal settlements are very fast in Kabul city since it is the only housing option for the majority (90% - 95%) of Kabul residents. If the problem of housing is left unaddressed, then the adverse impacts of informal settlements will stand to exacerbate existing challenges and make it more difficult for municipal government to deal with it and achieve sustainable development goals. Therefore, it needs extreme care to be exercised by municipal government concerned to prevent the growth of existing and the springing up of new informal settlements in the city.

Given the 1) complex nature of informal settlements in Kabul city, 2) the public institutional policies, 3) the capital constraints, and 4) the resettlement experiences of other countries, the government intervention and policies shifted from the forced eviction/relocation to *in-situ* upgrading. By doing so the government deals with these settlements as part of a solution rather than a problem. Today *in-situ* upgrading is acknowledged widely and recognized as an optimal alternative to conventional approaches.

The growth of informal settlements and actions to address it, is now widely being discussed at national, city and project level, Lack of clear and distinct policies and the absence of an independent upgrading authority along with resource constraint make it more difficult to address the problem of informal settlement at the city level, and often led to overlapping in role and responsibilities of dif-

ferent actors and complicated administrative procedure. Despite the fact that the Informal Settlement Upgrading Policy was prepared by MUDH in 2013 but due to the unknown reasons it has not been presented to Cabinet for approval [4]. City level upgrading has never been taken into action for the Kabul due to both resource constraints in the access to capital and poor institutional and regulatory framework in management.

Leaning on the above, currently, various sectors are working in upgrading section including MUDH, KM, CRIDA, UN-Habitat, World Bank and so on but lack of clarity in determining the role and responsibility at various levels is weighed down the entire process of upgrading.

As the informal settlements are sprawling and the government is unable to cope with, there is an urgent need for an integrated multi-sector upgrading model in order to improve the existing situation of the informal settlement and provide adequate and formal housing for the growing population. Integrated basically refers to mean two different things, the first, is a multi-sector, coordinated and mutually supportive approach in which all different sectors operate so that results in one are reinforced by achievements in another, the second meaning is the overall integration of the city, whereby the marginalized portion of city and the urban poor is integrated formally into the rest of the city (Rossiter, 2000). The multi-sectoral approach to development is single-goal oriented, with all sectors involved aiming to achieve the same outcome but decentralized in management and execution (Majale, n.d.). For this purpose, the study focuses on the first type of informal settlements which are the dominant type of informal settlements in the city and began by selecting the Hothkhel as a case study.

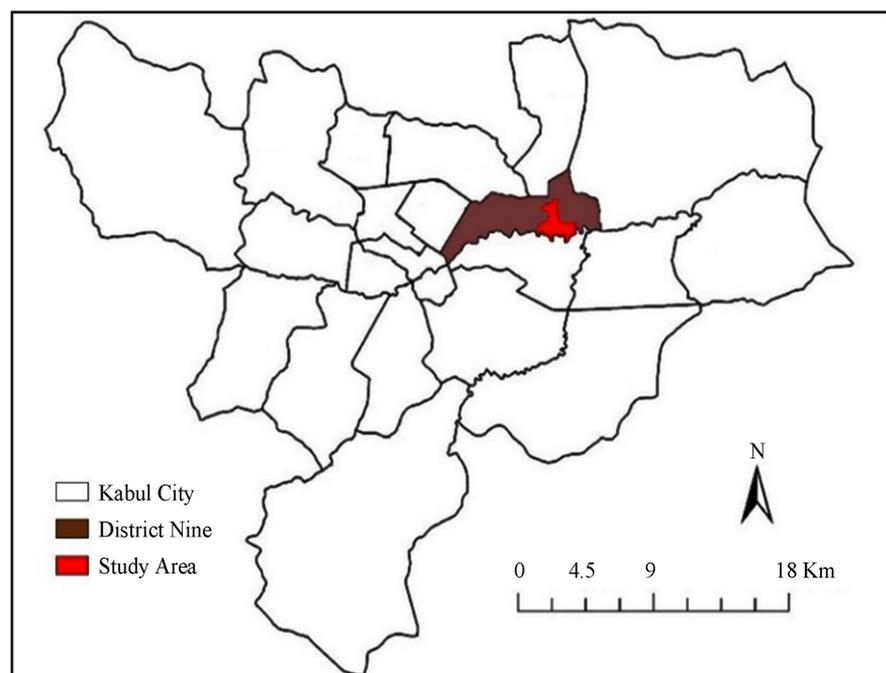
### **3. Study Area: Hothkhel Informal Settlement**

This research focuses on an informal settlement of District nine named: Hothkhel, to analyze the existing situation of the area in order to understand the current needs, local preference and existing potential to transfer the area into a sustainable and vibrant community. The main reason for selecting Hothkhel as a case study was the availability of required data, since a socio-economic and demographic survey was conducted by CRIDA in 2017, another reason was that Hothkhel represents almost the same situation of the major informal settlement of Kabul city, as it is sprawled informally on privately-owned farmlands. Due to rapid urbanization and drought, some agricultural land transformed/transforming either to residential or remained vacant which needs careful management not just to stop the sprawling of the informal settlement but also to consider it as potential in transforming the area to a formal and sustainable community. In the following sections the demographic, socio-economic, existing land use and activities, building structure, infrastructure and service availability of the study area is investigated.

#### **3.1. Study Area Profile**

The study area spans an area of 306 hectares and situated along Kabul-Jalalabad

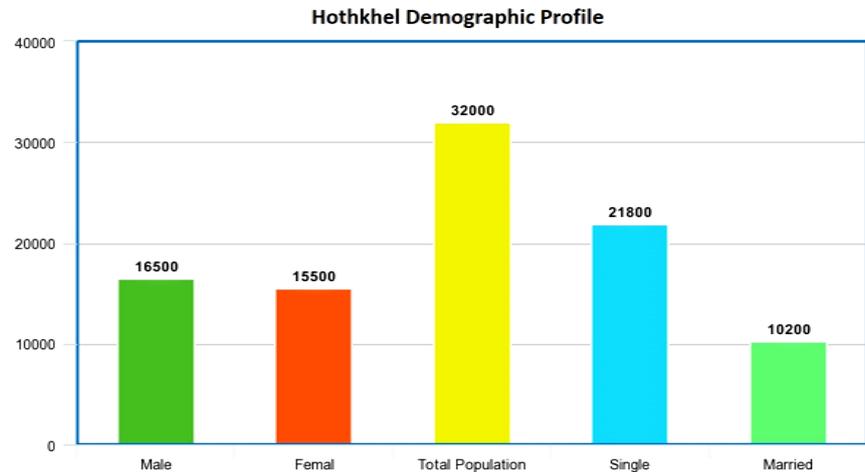
Highway in the nine district of Kabul city. District nine is considered to be one of the populace, densest and key district of the Kabul city since a major percentage of international, governmental and private institutions as well as the largest industrial zone of Kabul city is located in the district. District nine is extended from the Central Business District (CBD) in the southwest to the eastern direction and has covered an area of approximately 20 km<sup>2</sup> with the total population of 279,638. Hothkhel located about 7 km to the east of CBD and separated by Kabul-Jalalabad highway into north and south sections. Although the proximity to the CBD and surrounding industrial area gives it numerous advantages Hothkhel has been developed informally with inadequate access to basic urban infrastructure. **Figure 2** shows the location of the study area.



**Figure 2.** Location of study area.

### 3.2. Demographic Profile

Hothkhel is growing at a rapid pace through sprawling on agricultural land. Currently, Hothkhel is consisting of nine Gozars (Gozar is a traditional district unit organized around the mosques... (Sahab, Mezziani, & Kaneda, 2014), consist of anything from 100 to 1000 or more houses) namely Kula Khel, Hoth Khel, Bazu Khel and Ghaibi Khel Gozars, in the north and Sulaiman Khel, Qeyamuddin, Hoth Khel, Daud Khel and Akbar Khan Gozars in the south. All together they accommodate a total population of 32,000 which consists of around 2500 housing units with 4800 families which means in every single plot around 2 families are living and the average member of each family is 7 people. **Figure 3** illustrates the demographic profile the study area



**Figure 3.** Demographic profile of the study area. Source: CRIDA, 2017.

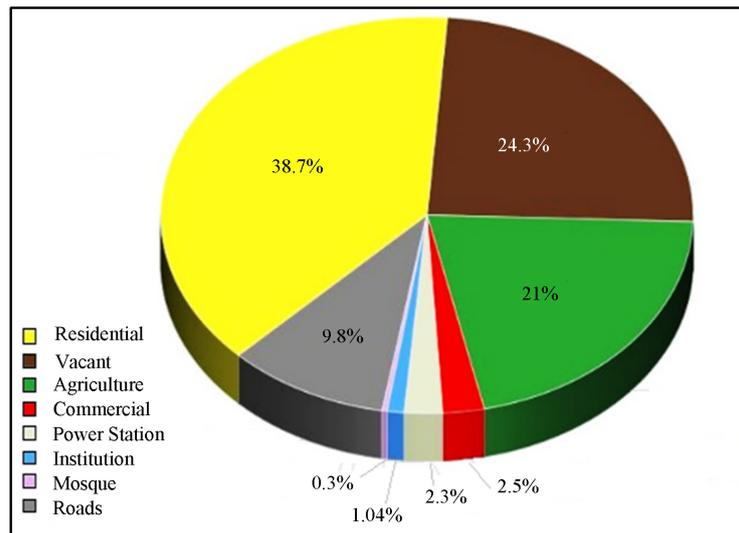
### 3.3. Service and Infrastructure

Informal settlements often lack adequate access to urban utilities and basic infrastructures. One of the most common challenges of not just the study area but all informal settlements of Kabul city is accessibility and mobility, which even to some extent influenced the overall permeability of the city since the majority of the roads in these settlements are very narrow and dead-end which do not permit the motor-vehicle movements. The existing alleys in the study area range from 1.2 to 6 m, as result 47% of the residential plots are not accessible by car and except two roads almost all these alleys are unpaved and without the drainage system. Hothkhel is also lacking a proper water supply network, and all the residents are using private wells which has a hand pump, motor pump or some of them are manual. Regarding social infrastructure, there are only two schools which are using as the primary, secondary and high school, healthcare facilities are also not sufficient since there is only one clinic for the entire area. The only social infrastructure which is adequate is mosques which mostly build either by the local community or by some charity organizations.

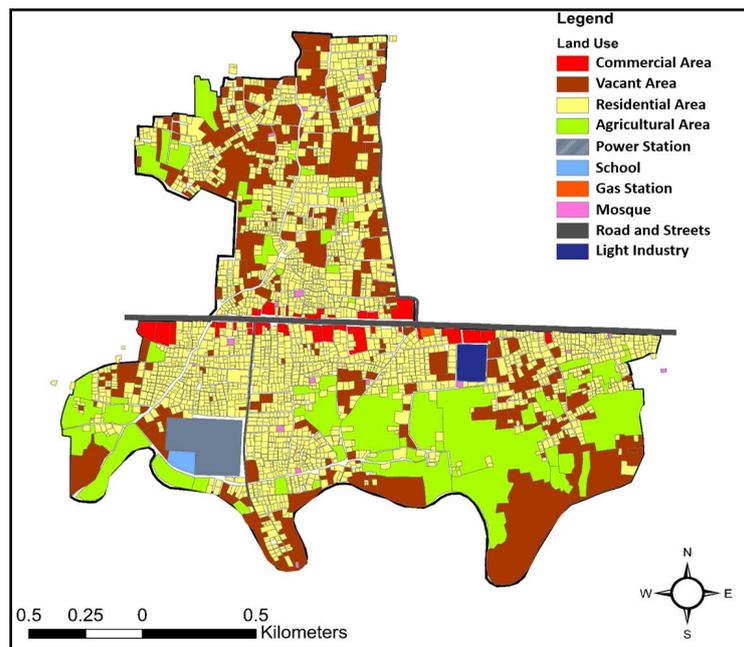
### 3.4. Land Use and Activities

Hothkhel used to be a small Gozar where most of its residents were working in their farmlands but due to rapid growth along with drought most of these productive agricultural land has transformed to the residential area or remained vacant. Hothkhel covered an area of 306 hectares, where the built-up area occupies about 167 hectares of area, which constitutes a mere 54.6% of the total land and the remaining 45.4% of the area is either covered by farmland 21% and vacant area 24.4%, respectively. The built-up area of Hothkhel is mostly residential, of a total of nearly 167 hectares of built-up area, 70.8 percent is residential houses, 4.5 percent commercial land use and the remaining 24.7% is public facilities, streets, and some industries. The northern part of Hothkhel is surrounded by the

industrial area and the Kabul River flows in the southern part of the area. **Figure 4** and **Figure 5** show the land use distribution of the study area.



**Figure 4.** Current land use area of study area.



**Figure 5.** Current land use of Hothkhel.

### 3.5. Physical Building Structure

The study area despite having slightly high built-up density, it has been filled with short and overcrowding buildings, built from the substandard material mostly mud-brick structure with timber roof by dwellers themselves. **Figure 6** and **Figure 7** are the result of the author’s investigation which shows the overall housing condition of the study area. Considering the building height/number of floor, the

housing stock of the study area is predominantly characterized by buildings with only ground floor 90.1% of the total and two-story building, and more than three story buildings each 7.7% and 2.2% respectively, whereas based on building material, almost 84% of the buildings are made of mud-brick walls cover by timber roof and buildings with concrete structure makes only 8.5% of total and the rest is semi-concrete structure buildings. The data used to digitize the relative maps for the building physical structure is based on the socio-economic survey of the study area conducted by CRIDA.

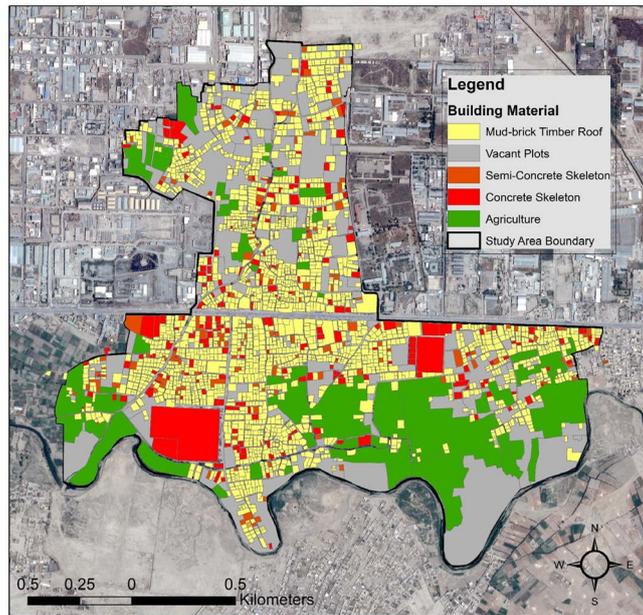


Figure 6. Building material classification.

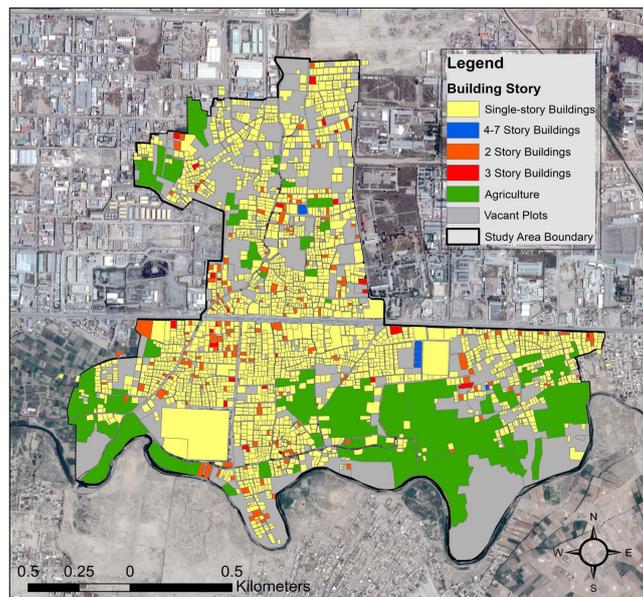
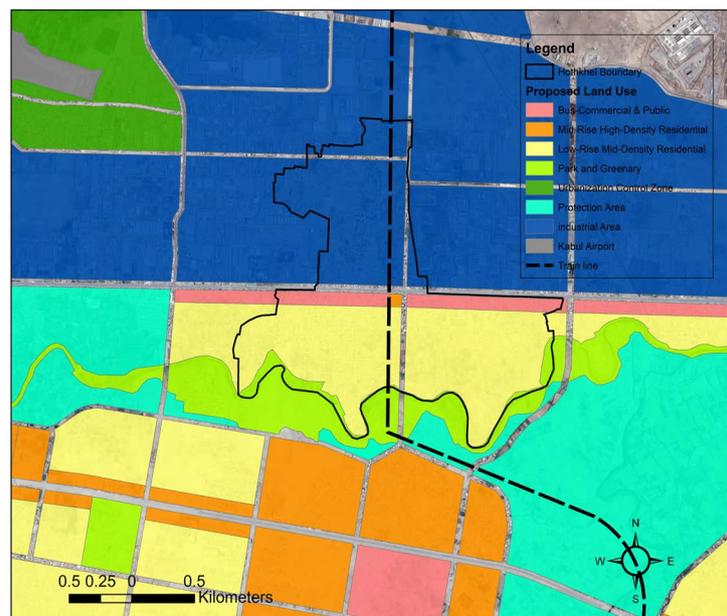


Figure 7. Building story classification.

### 3.6. Proposed Land Use by Master Plan

Based on new Master Plan which has been revised in 2011 the study area is classified into two parts whereas the northern part is assigned for industrial activity and the southern part is the residential area that covers all the existing built-up, vacant and agricultural area with a business and commercial strip along the Kabul-Jalalabad Highway. The residential function in the master plan is sub-divided into three categories: 1) low-rise low-density, 2) low-rise medium-density, and 3) medium-rise high-density, in order to consider the water allocation balance. The study area is regarded as the second category of residential land use with a population density of 280 p/h. Three new streets each with 40 - 50 m weight have been proposed by the master plan which only one of it is crossing the study area. Along the new street, a train line (LRT) is also proposed which is parallel to the street that crosses the study area and goes all the way to Kabul new city as shown in **Figure 8**. Considering the constraint and potential of the study area this study intended to come up with a comprehensive and more participatory upgrading model as a strategic and suitable approach to cope with the informal settlements issue, suggesting integrated multi-sector upgrading.



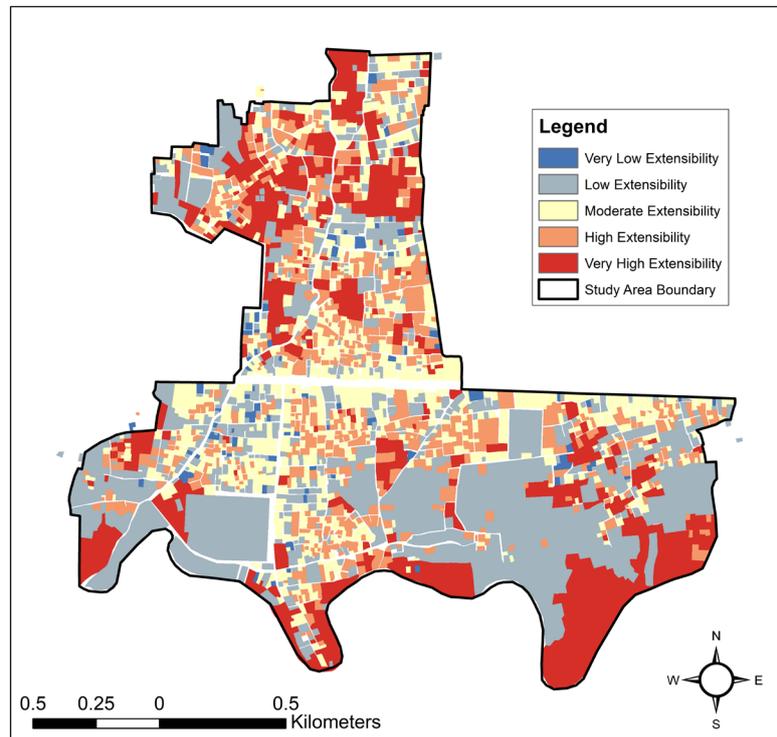
**Figure 8.** Proposed land use by the master plan. Source: JICA, 2011.

## 4. Integrated Multi-Sector Upgrading

The persistence and continuing growth of informal settlements in Kabul city is an indication that the current intervention strategies have not succeeded in reversing the trend. The magnitude of the current urbanization and the informal growth of the city calls for a pro-active and efficient (re)development strategies. Hence an integrated multi-sector upgrading is required to deal not only with informal settlement upgrading and their environmental degradation process but

also with the current urbanization pressure and housing demand. In order to consider all the aspect of an integrated multi-sector upgrading, it is important to study and analyze the targeted area in depth to understand the existing potential and limits of the area. To do so, a study was conducted by the authors to identify the infill potential of the study area; the study can be considered as the base for the integrated multi-sector upgrading. The paper, "Suitability Analysis for Infill (Re)development within Informal Context of the City: A Case Study of Hothkhel, Kabul City" by the author, shows the infill potential of the area. In this study a multi-criteria analysis method was used, using 7 potential criteria namely Lots Size, Building Material, Building Floor, Access and Permeability, Restricted Area, Vacant Plots and Land Value Index, where the findings of the study indicate that there is a huge infill potential in the study area which needs proper upgrading strategies to be implemented.

Since the local government lacks a city-wide upgrading strategies, or there is no sufficient capital available, and the institutional capacity to mobilize the communities is undeveloped, in addition, commercial bank and developers are not willing and often skeptical about working with low-income households and above all, available resources are much less than what would be required to finance priority investments and the initial steps of sustainable upgrading. Therefore, it's important to initiate the integration of the current upgrading modes along with some policy reforms. The integrated multi-sector upgrading is expected to be a joint upgrading program which would enable all the related upgrading sectors and also the people to work together and create a formal partnership legalized by contracts and cemented with the spirit of mutual trust and commitment. The key aspect of this program is that the household with the support of local NGOs form cooperatives to conduct the upgrading project with the private sector, where the government continues to provide the required infrastructure and physical improvement mainly for the areas with low redevelopment capacity which needs only physical upgrading along with public facility. For the areas with high redevelopment capacity, the settlement will be replaced with the modern apartment complexes built by the private sector as an exchange to demolished houses and the remaining apartment will be sold to the open market to cover the construction cost, which will reduce the burden of financial investment of the government. To farther attract the private sectors, the scheme uses the Transferable Development Rights (TDRs) which allow them to transfer the surplus development rights of the protection area (farmlands) and built the received site to its full capacity. The mechanism is very simple where the NGOs mobilize the community and support to organize the community-based organization (CBO), the CBO (property/house owing residents) provides the required land for redevelopment, the private sector shoulders the housings costs and the government with the support of international aid organizations will provide the required social and physical infrastructure. The CBO member will participate voluntarily and as an exchange to their land they either pay or receive money depending on the size of their land and the size of the received apartment.



**Figure 9.** Development capacity of the study area. Source: Amiri & Nsenda, 2018.

## 5. Proposed Land Use

The proposed land use for the area is in line with the master plan, and the existing features (potential and limits) of the area. In order to improve the connectivity and permeability of the area, new roads have been proposed considering the minimum compensation based on potential infill map. Since in the master plan the northern part of the study area is designated for industrial activity and the southern part for residential purpose, where all the agricultural land is supposed to convert to built-up area even though the study area is located adjacent to protection area (green belt) which is planned to be a groundwater recharge zone. To protect the available farmland and to densify the existing built-up area in order to resettle the northern inhabitants, the Transfer of Development Rights (TDR) has been used as a protective strategy. The TDR, as an incentive-based tool, will provide a source of the private capital where the developer buys the development rights of farmlands while farmer still owns the land for farming. In the TDR program, there are mainly four components: 1) The Sending Site, 2) The Receiving Site, 3) Market for Development Rights, and 4) Transfer Ratio. Where in case of Hothkhel the Sending Area is obviously the farmlands and the Receiving Areas are the areas that have high development capacity which shown in red, orange and yellow color and labeled as very high, high and moderate extensibility in **Figure 9**. The TDRs will enable the developer to develop the Receiving Site at a higher density than allowed density by the master plan.

In the proposed land use plan the residential land use is around 83 ha and have

been classified into three types: low-rise mid-density, mid-rise high-density, and mixed-use. The first type accounts for over 34 ha, which is generally the areas with low development potential that needs only physical improvement and public facility since the housing stock is generally solid, well-designed and built with durable materials. Around 45.5 ha is assigned for the second type, the area assigned to this type is basically areas which have high development potential and where the development rights of the preserved farmlands (TDRs) will transfer and construction of new apartment complexes will take place. The mixed-use covers 3 ha which will be used for commercial-residential and will contain commercial facilities, offices and residential apartments.

The total population density for the residential land use is in compliance with determined population and water allocation scheme of the master plan where, a population density of 280 p/ha is assigned (JICA, 2011), since the area covered by Hothkhel is merely 152.8 ha accordingly the total population for the study area is planned to be 42,784 people. The current residents of the study area are approximately 32,000 people (CRIDA, 2017) therefore the population to be housed by the first type of residential land-use is based on the proposed density of master plan, which will house 12,712 people. Since the northern part of Hothkhel is assigned for industrial activities, to resettle/relocate the residents (12,011 people) the second and third type is expected to house them through in-fill and densification, despite providing housing for its own residents. To do so a 550 p/ha density is required to be assigned to the second and third residential land use types. Figure 10 and Figure 11 illustrate the proposed land use.

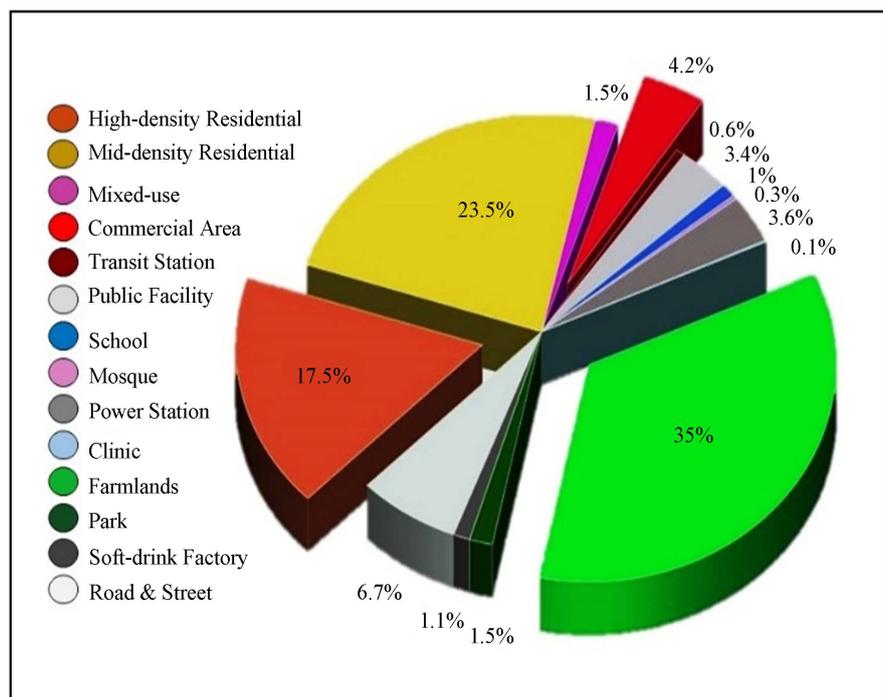
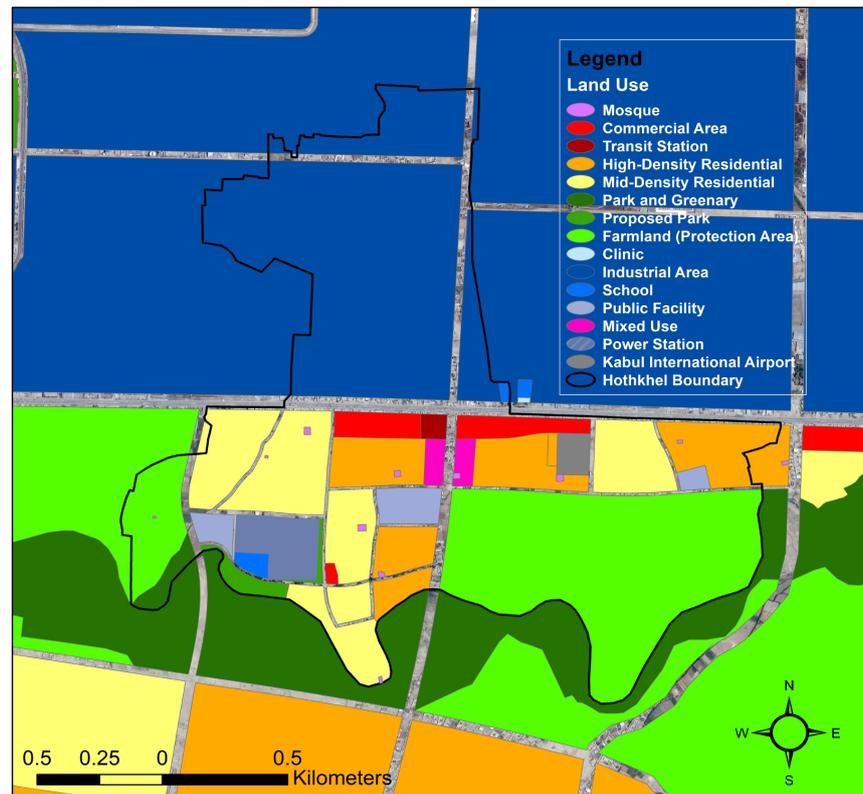


Figure 10. Proposed land use area (%).



**Figure 11.** Proposed land use for the study area.

## 6. Conclusion

The urgency for the upgrading of informal settlement has been proven by this study, which suggests a comprehensive and more participatory upgrading model as a strategic and suitable approach to cope with informal settlements issue. The model suggested herein consists of rationalization and integration of the conventional upgrading modes.

The overview of the conventional modes of upgrading indicates the following facts: Non-exploitation of informal settlements' growth potential, non-consideration of tenure, lack of particular strategies for preventing the growth of these settlements and lack of strategies to preserve the environmentally sensitive areas.

Since upgrading is usually practiced at the project level, it is often done in isolation and, as such, not has been integrated and scaled up as part of the city development plans.

Given Hothkhel's potential for growth on one hand and the proposed land use by Kabul's master plan, on the other, this study proposed a land use plan for the study area based on integrated multi-sector as an example to scale up the model for the city level upgrading.

It has been shown here that the integrated multisector upgrading helps to preserve the available agricultural land by transferring their development right to areas which have higher development potential whereby one can optimize the land use efficiency, encourage urban agriculture and also maximize the so-

cio-economic aspect and community cohesion by preserving the main features of the area.

The result highlights that the informal settlements of Kabul city still have a high (re)development capacity that can allow for additional buildable volume without growing out of the current city's perimeter and preserve the available agricultural land. In the case of Hothkhel around 70 ha of farmland have been preserved while around 12,000 additional people are to be housed within the same area applying the TDR strategy.

As such, one can say that the implementation of the integrated multi-sector upgrading strategy has the scale-up potential. In turn, this increases the reach of beneficiaries and ensures an inclusive and efficient urbanization.

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### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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